

Detailed meeting summary of the Delta Independent Science Board
June 11 and 12, 2015

Thursday June 11, 2015 ~ 2nd Floor Conference Room, Park Tower

1. Welcome and Declarations (Collier)

Present: Brian Atwater, Stephen Brandt, Liz Canuel, Tracy Collier, Jay Lund, Dick Norgaard, Vince Resh, John Wiens and Joy Zedler. Absent: Joe Fernando. There were no new disclosures from any of the Board members.

2. Closed Session - Lead Scientist Recruitment

3. Delta ISB Chair's Report and Business Matters (Collier)

Chair Collier reported that all of the contract amendments for the reappointed ISB members have been submitted to the DSC for processing.

4. Delta Stewardship Council Chair and Executive Officer's report (Fiorini, Pearson)

Chair Fiorini reported that:

- The six ISB members recommended for reappointment were approved at the May Council meeting. He encouraged the ISB to consider the implementation of staggered terms.
- The Council approved the appointment of Dr. Joy Zedler as a new Board member. Zedler is Professor of Botany and Aldo Leopold Chair of Restoration Ecology at University of Wisconsin-Madison. Her research concerns wetlands and the conservation and restoration of biodiversity and ecosystem services. Chair Fiorini acknowledged the good work and service provided by former Board member Meyer.
- At the May 11, 2015 DPIIC meeting, a [report](#) by a high-level scientific work-group was approved by the DPIIC. The report contained a list of high-impact science actions that can be implemented over the next 1 – 3 years.

Executive Officer Jessica Pearson reported that:

- The FY15/16 budget, effective July 1, 2015, will contain \$1.5M for core functions such as the ISB and science communications, and creates an additional position for a grant manager to administer the grants and directed research associated with \$4M of research funding;

- Ryan Stanbra is the new legislative appointee who will provide details about bills that may be of interest to the Board;
- AB501 is now a “two-year bill” and the proponents are trying to figure out if there is a path forward that adds value to the parties involved;
- AB1201 now directs CDFW to develop a science-based approach to predation, focusing on Striped Bass. The ISB is no longer mentioned in this bill. Pearson doesn’t believe that this bill will come back in a form that affects the ISB;
- In light of the recent decoupling of BDCP, the Council is taking a “wait and see” approach as there are still details coming forth, but is currently thinking about what it means to have a long-term ecosystem restoration strategy and what happens to the conservation measures that were part of the BDCP (how do we ensure they moving forward). As part of this effort, the Council is engaging with David Okita (Resources Agency), who is leading the EcoRestore Program. To date, it doesn’t appear that there will be a programmatic EIR for EcoRestore. This is where the Council might be relying on the ISB’s expertise. Pearson hopes to be able to report more information at the July ISB meeting.

John Wiens reminded the group that the ISB’s Habitat Restoration Review cautioned about the potential for individual habitat restoration efforts to be considered independently of other habitat restoration efforts. It seems like there is the potential for that to happen with the many smaller projects identified as part of EcoRestore. Chair Fiorini shares this concern and added that EcoRestore is a good next step but one that still needs knitting together at the landscape level.

5. Lead Scientist Report (Goodwin)

Lead Scientist, Dr. Peter Goodwin, reported that:

- The Delta Science Program, State Parks and the Delta Conservancy are working on a symposium for the fall about invasive aquatic weeds. *Subsequent to the meeting, this symposium was scheduled for September 15, 2015.*
- The Integrated Modeling for Adaptive Management of Estuarine Systems [workshop](#) was planned in conjunction with The University of California at Davis’ Watershed Science Center and supported by the National Science Foundation and the Delta Science Program. There were international participants from Korea, Hong Kong and Australia. The writing teams are working on their respective sections and the next step will involve blending those sections together.
- The Science Program has been asked by several groups to facilitate discussions associated with monitoring at the salinity barrier and documenting effects. There is a sense that we could lose an opportunity to learn about consequences of changes in flow patterns, accuracy of our models, if we don’t act quickly.

- A two-tiered approach to the high-impact science actions presented to the DPIIC is being pursued; a rapid response method (directed action) and via a Request for Proposal or Proposal Solicitation Process. A link to the high-impact topics can be found here: <http://deltacouncil.ca.gov/event-detail/11866>
- The Data Summit White Paper has gone to the printer. The next step is to figure out how to implement the data sharing vision. This could be in the form of road testing the eight recommendations via a pilot effort focused on Delta issues.
- The 2015 *State of Bay Delta Science* process will be different than the 2008 process, namely utilizing the San Francisco Estuary and Watershed Science (SFEWS) online journal for publication. The ISB has been asked to provide a retrospective review of the process. Many of the ISB members are also chapter authors, so it doesn't make sense to have ISB members review their own writing. Instead the ISB's review (Spring 2016) will focus on the publication process used, if it was effective or could be improved in the future. A summary document will also be generated, since SFEWS journal articles will be less useful to people at the agency Director level. An idea that Dr. Zedler brought up, is how is the translation going to happen and is that a role for the ISB? The work isn't done when the report is written; use of the knowledge is the preferred end product and perhaps more discussion should consider translation for a wider user group. Other parts of this discussion centered on how do we promote and publicize this report and should it be called The State of Delta Science, instead of The State of Bay-Delta Science? Collier suggests discussing this during the self-assessment since feedback to the ISB has indicated there should be better linkages between the Bay and Delta.
- There was an Independent Science Peer Review Panel looking at the strategy behind the delta levees prioritization methodology on May 19 – 20, 2015, <http://deltacouncil.ca.gov/event-detail/11868>
- The public version of the Delta Challenges report is anticipated in about one month.

During Public Comment, Tom Zuckerman shared his concern about the disconnection between the ISB's Delta Levee Review and the adoption of a policy statement or strategy, on topic, by the Council. Zuckerman believes that the Council should not be attempting to describe a Delta Levees Investment Strategy or policy statement out of sequence from the results of the ISB's review of Delta levees. Instead, Zuckerman hopes that the Council will exercise patience and wait to hear the results of the ISB's review. Chair Collier added that the ISB has struggled with the temporal aspects of the ISB's levee review.

6. Draft Report, Fishes and Flows in the Sacramento-San Joaquin Delta: Strategic Science Needs (Brandt, Lund, Fernando)

Brandt reported that the report has been modified a lot but comments are still welcome. Brandt is anticipating that the next version will be the final version. Most of the changes have

revolved around providing more clarity and background. One sentence in particular was pointed out several times during the public comment period (lines 41 – 43), “Yet, the state of science on fishes and flows in the Delta is inadequate to make reliable predications of how water management affects different species of fishes because the underlying processes that connect changes in habitat conditions to fishes are inadequately understood.” The Board did not intend to say the science was inadequate so this sentence has been rewritten with more specificity to read, “The state of science on fishes and flows in the Delta is reasonably robust and well-reviewed. Retrospective analyses show that at least some fish populations are affected by some flows, but fish and flow relationships have often not been causally explained or quantified adequately to make testable predictions on how specific management decisions on flows will affect the magnitude or sometimes even the direction of changes in fish populations.” Atwater suggested two other ways to clarify what the authors intended to convey:

- Make clear what you do not want to say, e.g. “This is not to say...”
- Give examples where the available science was not able to be adequately quantified or make testable predictions relative to a specific management decision.

Wiens asked Brandt what words of advice he could share about the process of reviewing Fish and Flows. Brandt’s advice include:

- Distributing a two-page proposal of what the scope and intent is going to be. This can be used to manage expectations of the Board, managers and the public.
- Don’t be afraid to put out early versions of a draft, repeatedly. Board members and the public want to comment a lot and frequently.
- Having a small team is useful but adding another member to the group later in the process can put “fresh eyes” on the product and be more inclusive of the entire Board.

Action: Board members submit comments about Fish and Flows to Brandt no later than next Friday, June 19, 2015.

Action: The Board will receive the next version of the draft Fish and Flows report one week prior to the July ISB meeting. That version will be discussed with the full Board and a determination will be made whether to finalize it at the July 17, 2015 ISB teleconference.

During public comment, John Mills noted that there is no mention of biological metrics (population, survival rates) or the idea that they can be achieved. That would provide a nexus to water management. Mills mentioned that the ISB and DSP are looked at to oversee whether actions and outcomes are those expected and it is very important to ensure that those outcomes are the outcomes intended. He also noted that the synthesis of data is very important. He sees the DISB as playing a role with the annual synthesis of data and hopes that agencies can move toward annual syntheses of data because that would inevitably increase the value of their projects. Synthesis of data has to happen quickly, and in the context of Delta science (i.e. the broad definition of Delta which is the ecosystem that supports the Delta).

7. Update on other Program Reviews

- Adaptive Management (Wiens, Resh, Collier, Hastings and Lund)

The small group working on the Adaptive Management (AM) Program Review report met yesterday to discuss the recommendations section. The review report focuses on how AM is conducted (or not) and perceived in the Delta. The recommendations section is intended to be region-specific and will have less to do with the scientific basis of AM and more to do with implementing AM as common practice in the Delta. Along these lines, the report will adhere to the spirit of AM and not the letter of the law. There is a draft circulating among the small group, and feedback from the team is expected to be returned to Wiens during the week of 6/15/15.

Actions: Wiens will conduct another revision and then circulate that version to individual members of the Board during the week of 6/22/15. Wiens will address those comments and then a public draft will be available for Board discussion at the July meeting.

- Delta Levees & Delta as Place (Atwater, Norgaard)

No time table has been discussed for the Delta Levees Program Review yet. Atwater reports that this review could be built around scientific opportunities or research that is needed to inform risks to levees or habitats associated with levees. There is a list of topics from the Delta Protection Commission's Economic Sustainability Plan, that could be used to structure the Program Review. It would also then serve to update the Sustainability Plan. That list of topics is also pertinent to the topics likely to be covered by the Delta as Place review. Atwater and Norgaard attend a review panel of the Delta Levees Prioritization methodology (<http://deltacouncil.ca.gov/event-detail/11868>), chaired by James Mitchell (Virginia Polytechnic Institute and State University (Emeritus)). Wiens asked if the Levees review will consider the scientific foundation underlying the prioritization of levee actions. Norgaard reports that this is not only a major issue for the review but also for *The State of Bay Delta Science*; something needs to be said to address this issue.

- Water Quality (Collier, Canuel)

Collier and Canuel are past the interview and information gathering stage for the Water Quality Program Review. They will prepare a prospectus of what the review is about and solicit public comment on the prospectus. Yesterday they met with a group of people from the Delta Regional Monitoring Program (Delta RMP), which is focused on pathogens, mercury, methyl mercury, nutrients and toxicity associated with pesticides. The intent was to discuss if it made sense to include a review of the Delta RMP into the ISB's Water Quality review. The outcome was that the needs for the Delta RMP review (i.e. is the Delta RMP being developed correctly such that it will be effective in answering management questions?) and the ISB review (i.e. is the science involved in water quality issues in the Delta adequate to support decisions?) are not at the same level of detail. The DISB review is high-level and broad whereas the Delta RMP review needs to be at the level of parameters and measurements collected. Collier and Canuel suggested that a more logical fit would be an independent review coordinated through the DSP. Collier and Canuel plan to continue working on the prospectus tomorrow after the conclusion of the ISB meeting.

8. Summary of comments from Delta science and policy leaders about the effectiveness of the DISB, (Collier/Lund/Brandt)

As part of the Board's self-assessment, Collier emailed key science and policy leaders working in the Delta and asked them to provide written comments about the ISB's effectiveness and activities. There was a high rate of return. The questions, and Collier's summary of the responses, are bulleted below:

- Have you or your agency found products from the DISB to be informative, useful, or have you not really noticed?
 - Most people replied in the affirmative regarding the usefulness of the DISB products. Responses noted that the thematic approach to the program reviews is well received, and that the quality and focus of the reviews have been steadily improving. Specifically, DISB comments about the BDCP, flow objectives, the Delta Science Plan and the Interim Science Action Agenda were found to be particularly helpful and respondents indicated they were grateful that the DISB weighed in on these issues. The Coalition for a Sustainable Delta had a different perspective, which was that the DISB was not effective since their collective impact is largely indiscernible.
- Does the DISB maintain an image of being unbiased in our reviews of science programs in the Delta? If not, we'd appreciate examples where we could do better.
 - None of the replies indicated there were concerns about the DISB being objective and unbiased.
- What are regional science issues where you would like to see additional DISB focus?
 - It was suggested that the DISB should more specifically link Bay and Delta processes.
- We struggle with consistency in the technical depth of our reviews. Are we too much in the weeds, or conversely are we too high level?
 - Since all users don't have the same needs, the consensus was that the DISB can be too high-level and also be too in the weeds. It's really a matter of perspective.
- Do you have any other recommendations for the DISB to improve our effectiveness?
 - Do more outreach with key policy makers with DISB products. This can be tricky since any discussion of the entire Board requires a public meeting, however it's important to note since this comment was mentioned multiple times.
 - More outreach is needed before beginning program reviews.
 - Program reviews needs to be better scoped out and circulated for public comment. Who's the audience, what's the charge, what's the expectation of the DISB and others?
 - Social science expertise on the Board is lacking; supplementing the Board with this type of expertise might be necessary.
 - Is there a way to expand the influence of the DISB, especially at the national level?
 - Is there a way for the DISB to reach out more to federal agencies?
 - Determine how the DISB can engage in California WaterFix and EcoRestore.

- Increase relevance by making more specific recommendations about resources needed for science, monitoring, and adaptive management. Why doesn't the DISB weigh in more about what the budget needs are?
- Ensure that the DISB products are easy to find on the website.
- The DISB should set their own agenda and think about what they can do to add value to big picture regional science needs.
- Don't forget the statutory charge related to monitoring programs that support adaptive management. This should be a central focus of all the DISB reviews.
- The DISB should be clear, specific and compelling in all their recommendations.
- The DISB should specifically review the Interagency Ecological Program monitoring program.
- The ISB should weigh in on the scientific basis of monitoring and effectiveness of projects associated with restoration projects funded by Prop 1.

Collier summarized that it is not his impression there are large or systemic problems with the way the Board is operating, but there are things to consider about improving future reviews.

9. Opportunity for extended public comment on ISB processes and effectiveness

As part of the Board's self-assessment, Lead Scientist, Dr. Peter Goodwin invited key science and policy leaders working in the Delta, to participate in today's discussion about the ISB's effectiveness and activities. A summary of the participants and their comments are below:

Byron Buck, Executive Director for the State and Federal Contractors Water Agency (SFCWA)

- SFCWA finds the DISB's products to be useful not only to the Agency, but also to the Collaborative Science and Adaptive Management Program. The DISB comments have helped create a more robust science program and have identified gaps between programs and agencies (e.g. weighing in on the SWRCB's flow criteria).
- It's nice to have a body that can remain unbiased and step away from the fray, however there is a potential bias by having the IEP Lead Scientist housed in the Delta Science Program, if in fact the DSP is supposed to be the "honest broker" of science.
- SFCWA has four ideas for regional science issues that should be focused on:
 - IEP monitoring efforts and how the IEP is structured.
 - Monitoring and adaptive management component of EcoRestore.
 - In regards to the Prop 1 funding that The Delta Conservancy will use to fund many small projects, is there a role for the DISB to help put together an umbrella effort that would foster more robust monitoring so that the Conservancy would not inherit the monitoring costs of the proposed projects.
 - Engage more in the legislative process (e.g. appearing in front of committees or at hearings) since independent bodies can carry more weight and credibility and can potentially garner more revenue for science.
- Many of the recommendations made by the DISB are not acted upon by the agencies. SFCWA believes that having more outreach with the agencies to determine whether the

recommendations are being translated into really good science, policy and action. Learning from recommendations that didn't get implemented (and why) would also help improve future reviews.

- Do not lose the institutional memory of the DISB by not having a succession plan.

Lund asked Buck how he thought it might be perceived if the DISB were to follow up with the agencies via a letter or other such outreach mechanism. Buck thought the follow-up should be more of a conversation and not a letter, since letters are frequently construed as threatening or trying to establish a record. Norgaard added that the DISB, in their part-time capacity, don't have the time to follow-up, and the DSP may not have the authority. Buck feels that it would be a useful function of the DSP, who is in the business of bringing together science, action and policy, to triage whether DISB recommendations are being implemented or integrated.

Tim Mussin and Lisa Thompson, Sacramento Regional County Sanitation District (Regional San) Regional San has been a strong supporter of this Board since its inception. Some aspects of Board business that they find particularly helpful are:

- Having meetings that are public and centrally located. This ensures the local perspective is not overlooked.
- Having local experts brief the Board and discussing emerging issues or the state of science not only informs the Board but it's useful to the scientific community at large.
- Board members conduct interviews and gather information from the community, and this keeps the lines of communication open and brings the community perspective into the program review process.

Suggestions about what the DISB could do to improve their effectiveness include:

- The community as a whole is getting to a place where we can try AM. Regional San views the DISB as an entity that can help kick start the AM process.
- Can the DISB support bringing in policy people from outside the Delta to help move AM forward? At some point, implementation of AM becomes a policy-level issue and this might be better brokered by a policy group.

Les Grober, Deputy Director for Water Rights, State Water Resources Control Board (SWRCB) Mr. Grober began by repeating "All of your products are informative and some of them are useful." What is useful to one user might not be useful to another user, so the issue of usefulness is hard to get away from. It's largely a matter of perspective. He stated that the DISB comments about the SWRCB's flow objectives were both useful and informative. In addition, the DISB comments about BDCP tracked and validated those of the SWRCB, which in turned helped everything advance, so that was also very useful. However, the draft Fish and Flows report, specifically line 40, "The state of science on fishes and flows in the Delta is inadequate to make reliable predictions of how water management affects different species of fishes because the underlying processes that connect changes in habitat conditions to fishes are inadequately understood," suggests that we can't move forward on the many things that we need to move forward with. Comments of a more specific nature would be more valuable. Other suggestions that Mr. Grober offered are:

- It's easy to overlook the things we do know. At times, it might seem mundane, but reiterating things we already know is important since we don't want to lose sight of what we already know.
- Show how your advice or recommendations are relevant to the decisions they need to support.
- Do not overstate uncertainty and the need for having a detailed mechanistic understanding of processes if that's what needed to make decisions.
- To the extent that the DISB can craft or provide a framework that integrates AM within the regulatory framework that would be very helpful.

Ted Sommer, Lead Scientist, CDWR

Dr. Sommer's comments today are intentionally provocative and come from the perspective of experiencing a lot of change in the 25 years that he's been working in the Interagency Ecological Program. He appreciates the high degree of independence and responsiveness to issues that the DISB has demonstrated. Suggestions to improve how the DISB contributes to the scientific community include:

- Provide an indication of what the ISB thinks are positive in terms of data and results would be helpful. From the management side, there is a tendency toward paralysis if the scientists and reviewers only point out shortcomings. It would be more helpful to acknowledge what are the consequences of not monitoring certain things or not making a decision. Anything that helps to support what is represented by the data is helpful.
- The ISB could provide leadership about how the science community sets priorities. For example, the balance between monitoring and research could be addressed. Historically, the balance between monitoring and research was evenly split. Currently, the IEP is almost exclusively monitoring right now. It would be helpful to provide guidance to the science community and managers about what they think is a reasonable balance between research and monitoring.
- The ISB could provide leadership addressing the degree to which science programs and activities are driven by top down or bottom-up processes. Historically, most of the study designs and ideas came from the science community. Currently, the work we do now is almost exclusively driven by lawmakers and top managers. It would be helpful if the ISB could weigh in on what an appropriate balance is between study designs formulating from the top-down or bottom-up.
- The ISB could provide an opinion about the balance between funding infrastructure (data warehouse, review panels, improving communication, forums) versus resources for conducting studies. If you have great infrastructure, you need a community to support it. What should this balance be? Canuel adds that this is also a concern in the larger scientific community. Recently, the ocean sciences community released its decadal review and reported that more funding is going to infrastructure than science.
- The ISB could provide advice on the appropriate balance needed for the science community to conduct science activities or conduct management for regulatory processes. Historically, scientists had more time to conduct science. Currently, because of the various crises, we have scientists unable to do science because their time is consumed with biological opinions and other regulatory assignments.

Mike Chotkowski, Bay-Delta Science Coordinator, USGS

Chotkowski agrees with much of what the previous invited speakers have said but to set his comment apart from the others, he wants to focus on one thing -- the organization of the scientific enterprise in the Delta. Currently, there is a lot of fragmentation and each of the science agencies and stakeholders have their own science programs; all of them pursuing individual missions tailored to the agencies supporting them. Chotkowski offers that this is not the best way to conduct science. The ISB could play a role in addressing the underlying issue of fragmentation and the way science is organized in the system. Chotkowski cites the large amount of legislative assistance (i.e. federal legislation that establishes working groups in the Chesapeake) that is in place to support science in the Chesapeake Bay region. We should look to other large systems to help justify a more robust scientific process and structure here in the Delta. The ISB is equipped to bring some of the lessons learned from other systems, to policy makers in the Delta, to help people work as one unit, sharing resources, pooling talent, setting up a more effective, unified and professional scientific establishment. Chotkowski's opinion is that the ISB's time would be better spent on the issue of organization than on providing technical review of any other subject possible.

Carl Wilcox, Policy Advisor to the Director for the Delta, CDFW

There are three important themes that Wilcox would like to expand on:

- Science Organization in the Delta. The Collaborative Adaptive Management and Science Process (CSAMP) is trying to work towards doing a better job towards organizing science by addressing common approaches to management questions relevant to water operations. This is exploring new ground, and the process moves slower than people would like but this is a function of getting people out of their own boxes, comfort levels and thinking outside boxes and more broadly.
- Adaptive Management. What process do you use to integrate the science into decisions being made? This is getting done, but perhaps is not well described. There are examples in the Delta of science that supports AM, such as The Water Quality Control Plan for the Delta is subject to triennial review and represents an opportunity to incorporate new science into decision making. The BDCP also endeavored to do the same. What would be helpful from the ISB is guidance that describes a process by which new science is used to make the ultimate decision about "changing course."
- Science infrastructure. Currently, most of our resources are going towards monitoring and the way that monitoring is conducted – not towards science to interpret monitoring results. We have made strides by way of the Management, Analyses and Synthesis Team (MAST) and Salmon/Steelhead/Sturgeon Assessment Indicators of Life Stages (aka "SAIL"). However, we still struggle with trying to gain information from a monitoring perspective to inform real-time decisions. It is important to contextualize and highlight the need for research and how science is funded. Competitive processes are not always the best way to get things done and sometimes directed actions need to be considered as well. Addressing how science can be funded to support to the academic and agency infrastructure, would be helpful. The ISB plays an important role for putting pressure on

everybody else to do a better job. Both the Department and the DSC are committed by statute to incorporate AM into their processes. Is that a formal process or something else, like just incorporating the best available information?

10. Reflections from outgoing chair (Collier)

Collier thanked the group for being high-performing and having a strong sense of collegiality, especially during the review of BDCP and the Delta Science Plan, which were not small undertakings.

11. Public comment for items not on the agenda

There were no additional public comments.

12. Meeting adjourned

Friday June 12, 2015 ~ The Paddlewheel Room, The Delta King

1. Welcome (Lund)

Present: Brian Atwater, Stephen Brandt, Liz Canuel, Tracy Collier, Jay Lund, Dick Norgaard, Vince Resh and John Wiens. Absent: Joe Fernando and Joy Zedler. There were no new disclosures from any of the Board members.

New roles beginning with this meeting include Jay Lund as Chair, Steve Brandt as Chair-elect, and Tracy Collier as Past-chair. Lund explained that today's meeting will include what was learned during the public comments discussion at yesterday's meeting, how the Board would like to change any of its processes going forward, and what the Board would like to accomplish in 2015 and 2016.

2. Self-assessment discussion (All, led by Collier and Brandt)

Collier asked if any Board members have items to add to the list of topics that will be discussed as part of the self-assessment: review process, ISB fellows, "independence", using the ISB as an "incubator" for the Lead Scientist position, emerging issues, and terms.

- Lund added an item about how much to interact with other agencies.
- Canuel added an item about outreach (reaching out to agencies as part of the ISB education role and so that agencies have an understanding of the ISB's role) and field trips (what do we want to get out of them and how to schedule them best).
- Wiens added an item about outcomes of review recommendations.

As part of the Board's self-assessment, Collier asked key science and policy leaders working in the Delta, to submit written comments about the ISB's effectiveness and activities. Many of the comments pertained to the review process but a summary of all the comments are below:

ISB review process

- Have a 1-2 page summary or scope for each review
- Map out a 4 year review cycle
- Find ways to have the agencies listen to and implement ISB recommendations
- Recommendations should include a funding and time commitment aspect
- Define who the audience is for each review
- Provide personal briefings to managers before or after the reviews
- Be more specific in the recommendations
- Develop a structured decision-making process in the context of adaptive management
- Review the IEP monitoring program

The group discussed having a prospectus for each review. Brandt recalls that there wasn't a lot of guidance when he began with the Fish and Flows effort, a year after it started. He believes that a document guiding the review would have been helpful for him, as well as for others (expectations about what the review will and will not cover), and would not preclude the review from evolving over time. It also provides for more full-Board involvement in the review process.

Decision: After some discussion it was decided that each review will have a review prospectus, and individuals leading the review effort will determine when the prospectus is drafted. The intention is that after Board-approval, each prospectus be distributed for 2-week public comment and include:

- Intended recipients/target audience
- Inputs to the review/who will the ISB interact with (e.g. wastewater community, agricultural discharge community)
- Timeframe
- Motivation
- Previous reviews related to the subject
- What will not be include
- Expected outputs and products
- Lead author(s)

Action: The lead authors for the Water Quality, Delta as Place and Levees reviews will try to have a draft prospectus available for Board discussion at the July 17, 2015 teleconference. After discussion by the Board, prospectuses may be distributed via the Delta Stewardship Council reflector for a public comment period of 2 weeks.

Another item that may help with the review process is bringing in others where the Board lacks expertise. Some aspects of water quality and levees may fall into this category.

Should DISB reviews include budget elements and recommendations as part of the review products? Collier suggested that using the gravitas of the DISB to talk with legislative staff and

participate in budget hearings as part of Lund's role. Wiens offered that there is a larger "follow-up" that needs to be conducted after reviews are accomplished, depending on how active the Board wants to be in broadcasting and/or advocating for review recommendations, as opposed to just explaining them in a report. Lund suggested that the Board doesn't have adequate time for proper advocacy so they need to be cautious here. He also suggested it is risky for the Board to propose particular reorganizations or funding levels since there is no reason why the Board should have expertise in that area. Instead, the Board could suggest where funding levels are not adequate to answer questions of interest to management.

Decision: There is agreement that participating in budget hearings and briefings with legislative staff is a good idea; however, Lund suggests that at least two Board members do this so the function is perceived as from the Board and not one person. There was no agreement about whether to include specific funding recommendations or reorganizations, however raising the issue seemed to be an appropriate role for the Board.

Other potential review topics were suggested:

- California Water Fix and EcoRestore
- Integrating science across institutional barriers (science organization)
- IEP monitoring and/or the broader monitoring and/or the Goodwin/Keay Comprehensive Review of Monitoring
- Watershed-Delta and Bay-Delta issues
- Solicit for emerging issues and what might be done about them
- *The State of Bay Delta Science* could be used as a source for future review topics or emerging issues

The subject of IEP monitoring and monitoring in general is such a big issue and it has been cropping up for at least 5 years. It's such a big issue that Resh doesn't believe it can be side-stepped. The issue is more about how to approach the review. Is IEP evaluated as a separate piece? Goodwin's perspective is that a monitoring review needs to be comprehensive and broader than the IEP and the Delta RMP so that we can get a better sense of the larger picture and how all of the component pieces fit together.

Action: Staff will circulate the 2-page comprehensive monitoring prospectus that Jeff Keay and Goodwin shared with the IEP Directors. Board members should review this two-page document and help the Science Program think about how it could be scoped into the larger 5-page document requested by the IEP Directors (i.e. how would the ISB propose organizing a comprehensive review of monitoring in the Bay-Delta?).

There was no additional public comment on the topic of DISB reviews.

Fellows

How can the ISB be more consistent in welcoming and mentoring fellows and ensuring that their fellowship is effective?

Jahnava Duryea is the ISB fellow and has been looking at various restoration efforts and helping with a review of levee habitat to support the Planning Unit and DSP staff tasked with addressing

issues of future investments in levee habitat as part of the Delta Levees Investment Strategy. Duryea thinks this will dovetail nicely into Atwater's Levee review, if the timing is right.

Action: Collier will send the Water Quality prospectus to Jahnava for her comments so that she has broader exposure to the activities of the whole Board. Other Board members with a prospectus should do the same.

Hastings asked the Board if they would like to be involved in the selection of fellows. There are opportunities for direct involvement via the "matching workshop" or by way of providing input to the project/opportunity descriptions. Brandt suggests that these matching efforts are more successful if the host entity has a clear idea of the project that needs to be accomplished. Lund suggested that a task for one of these fellows could be mapping out how all the agencies connect together. Hastings suggested that Duryea could map the agencies that have any responsibilities in the levee arena. Collier asks if there is a possibility of having a fellow longer than one year.

Action: Hastings will look into the possibility of retaining future fellows for a longer term or extending terms, either through SeaGrant or a different mechanism. She will also look into the timing of the next fellow solicitation so that the Board and Delta Science Program staff can start planning.

If the Board is to look ahead, it would be good to start thinking now about the need, role and a set of activities that a future fellow could accomplish. When the receiving agency is well prepared, things work out the best for the Program, the fellow and the Board.

Action: Hastings will send Collier, Wiens, Lund and Brandt the following placeholder, "The DISB is interested in a fellow that will investigate the scientific aspects of adaptive management and the effectiveness of science among agencies." They will wordsmith that statement into 2 – 4 sentences that the DSP can use for the next fellows recruitment cycle.

There was no public comment on this topic.

"Independent"

What does "Independent" in Delta Independent Science Board mean? The only negative comment Brandt reported receiving on this topic of independence was if the DISB proposed more science, it could be self-serving to the scientists of the Board. The overwhelming sentiment was that the Board does act independently however Collier recognized that more recently there has been some tension or concern but he doesn't feel it's too much of a concern if the Board continues to act independently and thoughtfully. Norgaard clarified that he views independence as the type of interrelation established between the Delta Stewardship Council and the Board. He does not want the Board or the Delta Science Program to be viewed as an arm of the Council. Collier reiterated that through the written comment process, he has been reassured that people see the DISB as independent of the Council but it is important to realize that the Board works with the Council and not for the Council (i.e. the Council is a primary client of the Board).

The DISB as an Incubator

The discussion before the Board and suggested by the Council, is whether the ISB should be viewed as an incubator for the Delta Lead Scientist position and if so, should it be prescriptive? First and foremost, the Lead Scientist needs to select ISB members that have the requisite qualities to serve as a Lead Scientist. Another suggestion from the Council was that this should be a “rolling process” (i.e. current Board members and the Lead Scientist continually consider new Board members with the interest and ability to serve as a future Lead Scientist, which is a deviation from past practice of mainly considering the needed expertise that a potential new Board members could fulfill). Canuel suggested that midcareer people who may be interested in a sabbatical or training opportunity could be a viable source for Lead Scientist candidates. Lund added visiting scientists (e.g. here on sabbatical working on something complex) to the list.

Emerging Issues

The DISB need to be kept informed of new scientific findings and emerging issues in the Bay-Delta. In the past, the Board has had regular speakers come to meetings and provide this function but has recently moved away from this practice and it needs to be reestablished. The group considered topics that could be presented at upcoming meetings:

- False River modeling results from DWR and John DeGeorge (Lund). This will help the group in thinking about levees, monitoring and water quality, among other things. The False River presentations could be informative to other agencies, all Science Program staff and the Council so it was suggested that this should be a Brown Bag presentation that coincides with a DISB meeting in Sacramento but it was also suggested that these presentations could be delivered at the Big Break Conference Facility in October when the ISB will meet there and take a field trip in the vicinity.
- Restoration Hub (Hastings)
- Yolo Bypass Restoration Coordination (Hastings)
- Adaptive Management experts (Wiens) – e.g. Ken Williams, Kai Lee (Packard Foundation), Carl Walters, Jack Schmidt (Utah State/USGS), Dean Blinn (Northern Arizona University, retired). Follow-up could include:
 - A summit, as described in the Delta Science Plan, that would be open to the public on how to do adaptive management starting with lessons learned from here and elsewhere. In time the focus could become narrower.
 - A workshop, similar to what the Puget Sound Initiative hosted, “Advancing the role of science on coastal ecosystem recovery.” The participants included scientists from the Delta, Chesapeake Bay, the Everglades, the lower Columbia River, Long Island Sound, and coastal Louisiana. There were five focal themes:
 - How are priorities set in the face of uncertainty (e.g. for restoration goals, actions, and research)?
 - How do we make management adaptive?
 - What is the most effective institutional structure for recovery science (structure that yields most coordinated research, modeling, and monitoring in support of management)?
 - How do we change minds and behaviors in a society more concerned about

immediate threats to personal welfare than future threats to collective survival?

➤ How do we effectively communicate science to decision makers?

Goodwin added that the Delta Science Program would be willing to host this effort and Collier added that he would like to help organize and convene a workshop on this subject.

- Partially recirculated BDCP/Water Fix (Lund)
- South Bay Salt Pond Group (Hastings)
- EcoRestore Program Manager David Okita (Atwater)

Decision: The DISB would like to have each in-person meeting include an outside presentation.

Action: Lund will invite David Okita (Resources Agency) to the August ISB meeting and will try to meet with him ahead of time (perhaps with Resh) to explain what the ISB is about and share the concerns they have.

Action: Staff will find out if John DeGeorge (RMA) and someone from DWR could give a presentation about False River modeling results at the Big Break Conference Center in October.

Action: Wiens, Norgaard and Collier will assist the Board is organizing themselves for the review of the partially recirculated BDCP/Water Fix. Staff will work with that small group to provide information as it emerges.

There were no public comments on the subject of emerging issues.

Terms

The Delta Reform Act did not outline a process by which ISB member terms would naturally stagger. A small amount of turnover has occurred but the majority of the membership was just reappointed to their second term. This leaves the Board potentially vulnerable to a large departure in August 2020, if all the reappointed members stay the duration of their second term. Once a Board member leaves their term, that term is over even if it wasn't completed in full. Brandt pointed out that if 2 members leave each year, the Board would have complete turnover in 5 years' time and no one would be able to complete a 10-year term. If one member vacates each year, you would have complete turnover in 10 years' time. Collier noted that at the end of Brandt's 2-year Chairmanship in June 2018, the only existing Board members able to act as Chair, are Fernando and Zedler. All other Board members, assuming they stay for the full 5-year term, will not have enough time remaining in their terms to conduct the duties of Chair and Past-chair (i.e. 4 years).

Actions: The Board will keep an eye on this by reviewing the attrition rate every summer to assess vulnerability, etc. Those members thinking about leaving should disclose that information in a timely manner and provide as much advance notice as possible.

There was no public comment on the subject of terms.

Items added: Outreach/Interaction with other Agencies, Delta Field Trips & Outcomes

Outreach. If the DISB is here to help build a confluence of all the science activities, given the Board doesn't have an infinite amount of bandwidth, how can it act in a more interactive way? How does the DISB bring the science together, conjoin it with the Delta Science Plan and the landscape and organization of all subsequent program reviews? One step might be alerting agency Directors more explicitly to the existence of the DISB, its services and abilities. Lund suggested targeted outreach to individual agency Directors with at least two members of the Board. Wiens thought that without a specific perceived need on a Directors part, outreach wouldn't extend too far. An alternative would be figuring out a way to carry the information to the best users and offering help in interpreting and implementing recommendations so that that the ISB is in a role to help build the necessary bridges. Norgaard suggested keeping the need for outreach with agency Directors on the radar, but not launching a specific program to accomplish it. Another suggestion was to use the DPIIC venue to better publicize recent reviews, although this only meets twice per year.

Decision: Goodwin thought it worthwhile to take more time to carefully determine the best way to structure this outreach effort.

Field Trips. Canuel advocates for including future field trips to upstream and downstream parts of the Delta. Atwater suggested False River, Dutch Slough and Big Break, to coincide with the October meeting at Big Break Regional Conference Center. Some of the Board members reported that the in-Delta field trips of the full Board were invaluable for getting members (especially new members) up to speed. Other Board members felt that there is also lots of value in having smaller group trips because it removes the logistics of traveling as a full Board, allows Board members to cover more ground and gets people to where they need to go to see and ask questions. Lund, Norgaard and Atwater could also lead field trips. It takes staff a long time to organize field trips so ideas for field trips need to be brought up well in advance.

Outcomes. Wiens asked if anything should be done to determine where ISB recommendations stand. Do they drift off into the ether, have they really influenced anything, or did they have an effect? What could the ISB have done to make their recommendations more effective? Did the review have any impact? Goodwin suggested that DSP staff simply track the recommendations of the ISB in a list, and if recommendations that have overwhelming support are not implemented, the ISB can raise those to the Council or other appropriate bodies. Hastings suggested that the earlier idea about mapping the agencies could possibly help with determining which agencies or groups of agencies should be dealing with certain issues.

There were no public comments about the Board's self-assessment agenda item.

3. Meeting outcomes (Lund)

- Decisions made

There were no additional decision items to document.

- Action items

There were no additional action items to document.

- Date, time, location and major agenda items for upcoming meetings

The July teleconference meeting will be held on Friday July 17, 2015 from 9 am to noon PDT. Major topics for the July meeting include finalizing the Fish and Flows Program Review report, determining if the Adaptive Management Program Review report is ready for public comment, Board-review of draft prospectuses for Water Quality, Delta Levees and Delta as an Evolving Place Program Review reports, and an update on the partially recirculated RDEIR/SDEIS for the BDCP.

August, September and October will be in-person meetings.

4. Public Comment

There was no public comment for matters under the purview of the Board but not on the agenda.

-Meeting adjourned-